16 total

"Glider Lab Data"

Glider Name	Distance (ft)	Time (seconds)	Speed ft/s
Sean 4	40.5	2.12	19.1
Chase 3	~~20~~ 5.83	1.19	4.89
Sean 1	45	2.00	22.5
Sean 2	28	1.09	25.7
Caya 1	~~66~~ 5.5	2.04	2.7
Braden 1	18	.72	25
Braden 2	19.5	.725	26.9
Caya Cody	6.83	.59	11.6
Brooklyn 1	35	2.35	14.9
BP 2	27	1.21	22.3
Cody 2	14	1.63	8.6
Fannah	14	0.61	22.9
Jake 1	~~14~~	1.16	0
Jake 2	3.1	1.89	1.64
Chase 1	35	1.28	27.3
Chase 2	33	2.27	14.5

Oct 9-10:03 AM

velocity has direction

.5 km in 5 min

.5 km in 5 min.

.5 km

velocity = 0

6 km/hr

Speed

10 min. there + back

Oct 11-10:11 AM

3.2 Velocity + Acceleration

I. Velocity

A. You need to know the speed and the direction the object is moving in order to communicate an objects motion

B. Velocity - describes the speed + direction of an object

1. Speed is the absolute value of velocity in one-direction

2. However, speed + velocity can change

Oct 11-10:19 AM

II Acceleration

A. A race car starting from the beginning of a race getting up to speed is an example of acceleration

B. Acceleration - the rate of change of velocity compared to time

1. Since velocity is both speed + direction, acceleration can occur with a change in speed or direction

2. If velocity + acceleration occur in a straight line, the acceleration is just the rate of change of speed

Oct 11-10:30 AM

a. If acceleration is in the same direction as velocity, the acceleration is just the rate of change of speed

b. If velocity and acceleration are opposite directions, the acceleration in negative or you decellerate

3. The amount of acceleration depends on the change in velocity + time interval
   a. time interval - the difference between the final time minus the initial time during an object's motion

Oct 12-10:00 AM

III Calculating acceleration

A. Average acceleration is the change in velocity (m/s) divided by the time interval (s)

→ m/s/s → m/s^2

→ km/h/h → km/hr^2

1. Δt = time interval, change in velocity = final velocity (v_f) minus initial velocity (v_i)

$\Delta V = v_f - v_i$

$\Delta t = t_f - t_i$

Oct 15-10:26 AM

practice problem:

$\frac{v_f - v_i}{t}$ $\frac{32\,m/s - 10\,m/s}{3s}$ $\frac{22\,m/s}{3s} = 7.\overline{3}\,m/s^2$

Oct 15-10:31 AM

3.3 A Crash Course in Safety

I. Why do we wear seat-belt

A. Many crash tests have confirmed that seat belts save lives

B. Should wearing a seat belt be a law?

1. 2 points of view

a. Seat belt law saves lives + money

b. making our own choices

→ could a seat belt be dangerous?

* Debate

Oct 15-10:35 AM

3.4 Connecting Forces with Motion

I. What is a force?

A. A force is a push or pull one body (object) exerts on another

→ List some examples of force:
gravity, friction, leverage

B. Effects of a force

1. What happens to an object that has velocity when a force acts on it?

C. Balanced Forces

1. Force does not always change an object's velocity
2. Forces on an object that are equal in size and direction are called balanced forces

Oct 16-10:15 AM

D. Unbalanced Forces

1. Dog-tug-of-war example: lady doesn't move until forces become unbalanced
   a. Net force - when one force is greater than the opposing force, the net force is the difference in the forces
   b. Net force always changes the velocity (which has both speed + direction)
   c. a net force causes both speed + direction to change

II Inertia + Mass

A. Inertia is the tendency of an object to resist change in motion

Oct 16-10:41 AM

1. If an object is moving, it will keep moving at the same speed in the same direction unless an unbalanced (or net) force acts upon it
2. Mass affects inertia: the greater the mass, the greater the inertia

B. Newton's First Law of Motion
→ an object moving at a constant velocity keeps moving at that velocity unless a net force acts on it; if an object is at rest, it will remain at rest unless a net force acts on it

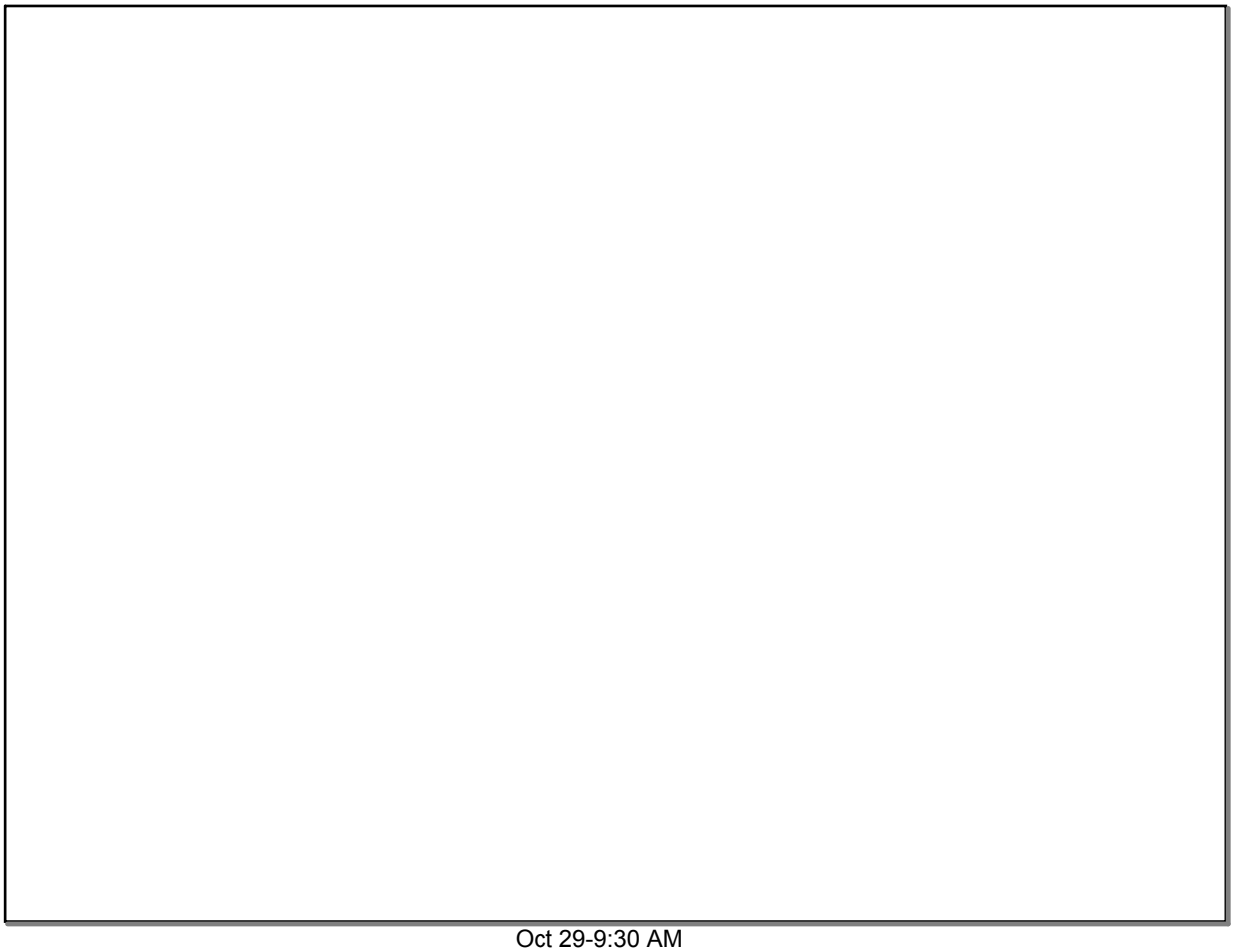
Oct 17-9:31 AM

II Friction as a force
→ book slows down on the table when it slides across it because of friction

A. Friction – the force that opposes motion between two surfaces that are touching

B. Life without friction
1. Friction between the soles of your shoes and the floor allows you to be able to walk

Oct 17-9:38 AM



Oct 29-9:30 AM